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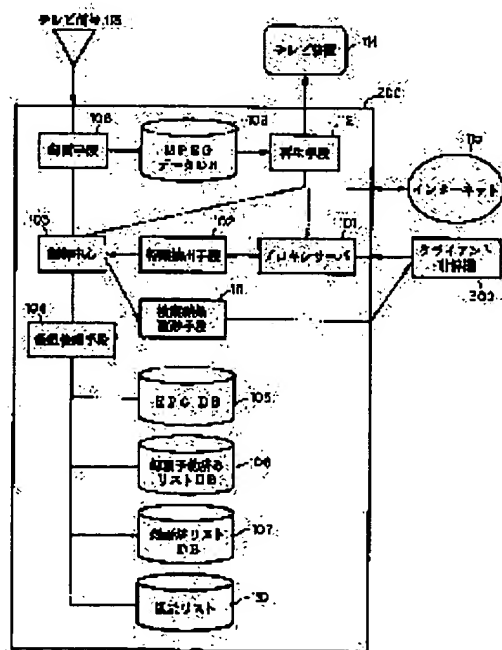
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(54) SYSTEM FOR RESERVING RECORDING OR REPRODUCING RECORDED PROGRAM FROM TELEVISION PROGRAM TABLE PRESENTED IN RELATION WITH FILE OBJECT REFERENCE

(57)Abstract:

PROBLEM TO BE SOLVED: To retrieve an electronic program table from the reference of a file object on the Internet.

SOLUTION: A client computer 300 accesses the file object on a network 115 through a gateway computer 200. A feature extracting means 102 monitors the data transfer of a proxy server 101, detects an access request from the client computer 300 and extracts features with a phrase held between tags from the file object of a response as a keyword. A program retrieving means 104 successively executes electronic program table retrieval, recording-reserved program retrieval and recorded program retrieval by OR ing the extracted words, prepares the television program table and displays it on the display device of the client computer 300. Recording can be reserved or recorded program can be reproduced by designating it in the displayed television program table with the mouse of an input device.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention cooperates at the time of homepage perusal of the Internet, and it carries out image transcription reservation of the TV program because a user directs to the approach of searching the television race card relevant to a homepage, and creating a race card, and the created race card with a mouse pointer etc., or it relates to the system which can perform playback of the TV program already recorded on videotape.

[0002]

[Description of the Prior Art] The method of cooperating with a TV program and displaying the Internet homepage on a television screen automatically is proposed by JP,10-177532,A. This approach is displaying the homepage based on the URL (Uniform Resource Locator) information included in a TV program. This is Bit which is the architecture which is going to acquire information from a network based on the information on a TV program, and the information city company developed in Japan. In service of Cast etc., offer of the URL information interlocked with terrestrial TV broadcast is performed.

[0003] In recent years, the program of television broadcasting is increasing by the spread of multichannel digital broadcastings, and the home electronics equipped with retrieval by keyword or the function which can carry out genre retrieval by EPG (Electronic Program Guide) which is an electronic program guide about a program to watch are sold. Since the electronic program guide is periodically broadcast with terrestrial TV broadcasting by methods, such as ADMS-EPG of Asahi data-broadcasting incorporated company, it can be searched [accumulating this in the personal computer equipped with television or TV tuner and perusing as a race card, or].

[0004] however, perusal of the file object on the Internet, simultaneously the description of the page were extracted conventionally, showed the user the TV program near the contents of a page, image transcription reservation of the TV program was carried out on that spot, or that whose timed recording was made was also shown to the user as a retrieval result, and there was no system which demands viewing and listening of a program [finishing / an image transcription] from a user.

[0005] In addition, although the system with which a document is searched based on a document is similar to the technique of this invention, when looking for a document, the approach of discovering another document which has relation from a document set is proposed by choosing a document rather than choosing a keyword by JP,7-085103,A which is the reference belonging to this field. Although this approach is searched by asking for how many times the keyword contained in a document is given, and displaying a keyword on many of those order, it is a document-retrieval system to the last, and does not draw up a functional document as shown in an electronic program guide.

[0006]

[Problem(s) to be Solved by the Invention] As mentioned above, conversely, even if the TV program could be interlocked with and it could see the homepage of the Internet related to a TV program as pleasure which united the television reception with the Internet perusal, while perusing the homepage of

the Internet, it was not able to interlock and the television race card related to a homepage was not able to be known. Moreover, although the program to watch by choosing keyword alter operation or genre retrieval could be narrowed down when a TV program was searched with EPG etc., there was neither retrieval of the television race card which made the homepage under present perusal itself the keyword, nor a method of showing the searched program to the order doubled with liking of a user as a television race card.

[0007] This invention aims at offering the system which can also collect the information acquired from television broadcasting in addition to the information collected from the file object perusal on a network while it searches an electronic program guide and can perform image transcription playback control from perusal of the file object of the Internet.

[0008] Furthermore, this invention aims at offering the system which it image-transcription-reserves and can reproduce the method of making the TV program already recorded on videotape as TV program information relevant to the file object seen now, or the TV program broadcast from now on show automatically, and the specified TV program when the file object on a network is being perused.

[0009]

[Means for Solving the Problem] In the system which invention of claim 1 presents a television race card in relation to file object perusal, and performs program playback recorded [image transcription reservation or] on videotape A feature-extraction means to extract the description from the contents of a file object on a network, A program retrieval means to search a television race card according to the description extracted by this feature-extraction means, It has a TV program timed recording means to reserve a desired program from the result searched by this program retrieval means, and a TV program playback means to reproduce the TV program recorded on videotape with this TV program image transcription reservation means.

[0010] Invention of claim 2 makes the description which the system feature extract means indicated by claim 1 extracts the keyword contained in the contents of a file object.

[0011] Invention of claim 3 shall extract the description for the feature-extraction means indicated by claim 1 from the similarity of the text of a file object, and the explanation phrase of an electronic program.

[0012] The program retrieval means in the system by which invention of claim 4 was indicated by claim 1 thru/or any 1 term of 3 shall carry out sequential execution of an electronic program table search, image transcription reserved program retrieval, and the recorded on videotape program retrieval.

[0013] Invention of claim 5 shall search only the program it is broadcast from current time henceforth that the electronic program table search in the system indicated by claim 4 is.

[0014] Invention of claim 6 has two or more display priority calculation methods, changes a calculation method according to liking of a user, and is equipped with a retrieval result plastic surgery means to be located in a line, to change the sequence of the retrieval result searched by claim 1 thru/or any 1 term of 5 with the program retrieval means of a publication, and to create a race card.

[0015] Invention of claim 7 displays the race card created by the retrieval result plastic surgery means in the system indicated by claim 6 on a client computer.

[0016] Invention of claim 8 can be made to perform image transcription assignment and playback assignment from the race card displayed on the client computer in the system indicated by claim 7.

[0017] A feature-extraction means to extract the description from the contents of a file object on the network where invention of claim 9 was indicated by claim 1, A program retrieval means to search a television race card according to the description extracted by this feature-extraction means, A TV program timed recording means to reserve a program from the result searched by this program retrieval means, A television race card is shown in relation to the file object perusal equipped with a TV program playback means to reproduce the TV program recorded on videotape with this TV program image transcription reservation means. It is the record medium which recorded the program for making a computer perform the system which performs program playback recorded [image transcription reservation or] on videotape.

[0018]

[Embodiment of the Invention] Drawing 1 is the block diagram showing the one whole example of the system of this invention. The control core 103 where the system of this invention controls the whole system, The Internet 115 showing the Web server in which a file object exists, The feature-extraction means 102 of the contents of a file object of WWW, and the proxy server 101 which is the gateway which interrupts the document on the Web server which a client accesses, EPG which has remembered the television race card to be a program retrieval means 104 to retrieve TV program information DB105 (database), The image transcription reserved list DB106 which has memorized television image transcription reservation information, The list DB107 which memorizes the TV program information already recorded on videotape recorded on videotape, The presentation list 110 of [for showing a race card], and a retrieval result plastic surgery means 111 to change [stand it in a line and] and arrange a retrieval result, An image transcription means 108 to record the assignment channel from start time to end time on videotape, The gateway computer 200 which consists of MPEG data DB109 which store image transcription data, and a playback means 112 to reproduce the TV program recorded on videotape with said image transcription means 108 as a video signal, It consists of TV signal 113 for receiving, television equipment 114 which displays the program recorded on videotape, and a client computer 300 which operates the gateway computer 200.

[0019] Thus, it also becomes possible like the gateway computer 200 and the client computer 300 to connect the main gateway computers 200 with two or more client machines in every other 1 and a network domestic by roughly dividing into two. Moreover, it is also possible to make it the product which unified the gateway computer 200 and the client computer 300. Drawing 2 is the block diagram showing the hardware configuration of the gateway calculating machine 200. The gateway calculating machine 200 shall have CPU201, a hard disk 202, memory 203, MPEG 2 encoder equipment 204, A/D-conversion equipment 205, television tuner equipment 206 (it connects with the antenna 207), MPEG 2 decoder equipment 208, the D/A inverter 209 (it connects with television equipment 114), a communication controller 210 (LAN connects with the client calculating machine 300), and modem equipment 211 (the Internet 115 is accessed) for a communication link. It is accessed from each means of the image transcription means 108, the playback means 112, the feature-extraction means 102, the retrieval result plastic surgery means 111, and the program retrieval means 104, and a hard disk 202 is EPG. It is the medium which memorizes each database information on DB105, the image transcription reserved list DB106, the list DB107 recorded on videotape, the presentation list 110, and the MPEG data DB109.

[0020] Moreover, the image transcription means 108 consists of MPEG 2 encoder equipment 204, A/D-conversion equipment 205, and a television tuner 206, and the playback means 112 is constituted by MPEG 2 decoder equipment 208 and the D/A inverter 209. Drawing 3 is the block diagram showing the hardware configuration of a client calculating machine. The client computer 300 shall have memory 301, CPU302, nonvolatile memory 303, an input unit 304, a display 305, and network I/O306. This is equivalent to the equipment generally called a personal computer. Since the WWW browser of the client calculating machine 300 is relaying and carrying out the Internet access of the proxy server 101 in the gateway calculating machine 200, the gateway calculating machine 200 can extract the contents of the file object of WWW. In detail, the method of junction is explained to JP,10-021134,A.

[0021] Drawing 4 is the flow chart Fig. showing the operations sequence of the system of this invention. Below, according to the flow chart of drawing 4, operations sequence is explained with reference to the block diagram of drawing 1 thru/or drawing 3. First, the client calculating machine 300 accesses the file object on a network 115 from the WWW browser to build in (step S1). (relaying a proxy server 101)

[0022] Since the feature-extraction means 102 is always supervising the data transfer of a proxy server 101, the keyword by which it is characterized is extracted from detection of the access request from the client calculating machine 300, and the file object of a response (step S2). A file object is the description language devised in order to disseminate the information on WWW called HTML (Hyper Text Markup Language), by inserting a specific alphabetic character with the notation called a tag (tag), could perform the free layout display on the browser, and is equipped also with the hyperlink function which can be jumped from a hot spot (hot link) to other files.

[0023] Drawing 5 is drawing showing an example of HTML of a file object. this -- an example -- **** - the -- a tag -- inside -- a file -- an object -- a title -- a tag -- it is -- " -- < -- TITLE -- > -- " -- from -- " -- < -- / -- TITLE -- > -- " -- surrounding -- having had -- a phrase -- a hyperlink -- carrying out -- a tag -- " -- < -- AHERF -- = -- O -- x -- ** -- > -- " -- from -- " -- < -- / -- A -- > -- " -- surrounding -- having -- **** -- a phrase -- all -- a file -- an object -- the description -- it is -- ** -- carrying out . The feature-extraction means 102 extracts as a keyword the phrase inserted into these tags. In order to extract as a keyword, morphological analysis of the phrase is carried out and only a noun is extracted. This noun may be a maximum of ten etc. pieces etc.

[0024] Drawing 6 is the keyword extracted as a description of a file object in the example shown in drawing 5 . That is, the three phrases "golf", the "Ozaki twin", and a "driver" were extracted from the file object as a description keyword. A television race card is searched with an OR for these words. Consequently, the TV program which contains the keyword of one of the above in a program title (explanation of a program) is searched. Moreover, as search methods other than this, a semantic vector method etc. can vectorize the semantics of the whole document, an inner product with the semantic vector of the program explanatory note of an electronic program guide can be calculated, and the search method of showing numerical high order can also be used (bibliography "the mystery of Sherlock natural sentence retrieval", Yamamoto Takaki: Mac Fan internet, the Mainichi Communications, Inc. March, 1999 issue).

[0025] The program retrieval means 104 aims at carrying out three retrieval of recorded [an electronic program table search and reserved program retrieval /] on videotape program retrieval, searching a desired program one by one, and creating the presentation list 110.

[0026] Next, it is EPG at the keyword extracted at step S2. The TV program which carries out the electronic program table search searched for the TV program broadcast by current time after this is the future, without targetting the past program from current time from DB105, and corresponds is extracted, and the presentation list 110 is created (step S3). In addition, especially since it is obtained from OS timer which a gateway computer contains, current time is not illustrated.

[0027] EPG which is an electronic program database here DB105 collected EPG data by which television broadcasting is carried out, such as an ADMS-EPG method, from TV signal 113, changed them into the database which can be searched, and has memorized the data for about one week to the storage of the hard disk 202 which is a storage region [**** / un-]. Since the EPG data itself are ability ready for receiving and it can also collect the Internet courses using the alphabetic character data-broadcasting reception function of television tuner equipment 206, it does not specify the collection means on a drawing especially. Drawing 7 is EPG. It is drawing showing the example of data memorized by DB. About 200 bytes of text sentence as which the DS of a television race card explains Program ID, a broadcast date, start time, end time, CH number, a broadcasting station, a title, and the contents to one program is memorized.

[0028] and -- if there is a program which performs reserved program retrieval which searches whether there is any program by which image transcription reservation has already been carried out into the presentation list 110 created at step S3 from the image transcription reserved list DB106, and has already been recorded on videotape -- a presentation list -- an image transcription -- reserved information is given and the presentation list 110 is corrected (step S4). Drawing 8 is drawing showing the example of data memorized by the image transcription reservation list DB. Like illustration, since the image transcription reservation list DB has memorized Program ID, a broadcast date, start time, end time, and CH number to one program, reserved program retrieval is realizable by searching whether the program ID of the presentation list 110 exists also in the program ID of the image transcription reserved list DB.

[0029] Subsequently, by the keyword extracted at step S2, if a registered program search which searches a TV program [finishing / an image transcription] from the list DB107 recorded on videotape is performed and there is a corresponding TV program, the information which is image transcription settled will be added and added to the presentation list 110 (step S5). Drawing 9 is drawing showing the example of the presentation list generated after said step S3 - S5. In addition, the "sheep" of the

information column of a list, "reservation", and settled ["settled"] are information which expresses the "image transcription reservation sheep" and "finishing [image transcription reserved" and "image transcription]", respectively.

[0030] For the retrieval result plastic surgery means 111, when the broadcast time of each program sorts in the order nearest to current time, the presentation list 110 created through said steps S3-S5 The program in which the means arranged in the order near current time and the keyword extracted with the feature-extraction means 102 are contained The means arranged in order of the fitness of retrieval by sorting with the number of the keywords, For example, a means to remove the program of a before [from 18:00 / 23:00] and to limit to appointed time-of-day within the limits, a means to limit time like a part for today's part or 1 week, and image transcription reservation -- finishing -- an image transcription -- finishing -- giving priority to and sorting either of the programs broadcast from now on **** -- image transcription reservation -- finishing -- an image transcription -- finishing -- there is a means except either of the programs broadcast from now on etc. A user is any one or making a multiple selection among these retrieval result plastic surgery means 111, and presents the television race card whose liking of a user the client calculating machine 300 suited (step S6). Drawing 10 is drawing showing the example of the presentation list of retrieval result plastic surgery means. The example arranged in the order near current time as an example of presentation of the presentation list 110 of retrieval result plastic surgery means 111 and the example put in order from the fitness of retrieval are shown.

[0031] Drawing 11 is drawing showing the example of a screen display of a client computer. The presentation list 110 is 1 time of timing at about 1 second, the newest data are displayed on the screen of a client computer, and the presentation list 110 is always displayed on screen right-hand side. It is because renewal of automatic [fixed] is carried out by the software by the side of these client computer.

[0032] therefore -- if a client peruses the file object on a network -- immediately after that -- a radical [page / applicable] -- a television race card and an image transcription -- reserved and the electronic program guide which made data recorded on videotape the list will be made, and the user of the client computer 300 will be shown.

[0033] A TV program is specified by judging whether there is any TV program to record on videotape (step S7), doubling cursor for the check box of the image transcription check column which is in the left end of a presentation list when there is a program to carry out image transcription reservation with the mouse of an input device 304 in step S6, in the presentation list outputted to the indicating equipment 305 of the client calculating machine 300, and carrying out click actuation of the mouse button. This event is transmitted to the image transcription reservation means of the gateway computer 200 via a network with Program ID, and image transcription reservation is performed. The image transcription reservation means incorporated focusing on [103] control saves the television image transcription program specified at step S7 on the image transcription reserved list DB106 (step S8).

[0034] If the image transcription start time of each TV program of the image transcription reserved list DB106 comes, from TV signal 113, the television broadcasting of predetermined CH number will be received through television tuner equipment 206 till end time, and Program ID will be recorded on record media, such as a hard disk of the MPEG data DB109, as an index. In the format called MPEG 2 (Moving Picture Experts Group) to said recording method, an animation is made easy to change an analog signal into a digital signal with A/D-conversion equipment 205, and to treat by computer, and a vast quantity of video datas are compressed and memorized with a data compression means. In addition, the image transcription of video is not limited to MPEG 2.

[0035] As for the TV program which the image transcription completed, the TV program information by which said image transcription was carried out to the list DB recorded on videotape is memorized after deletion from the image transcription reserved list DB107. Program ID, a broadcast date, start time, end time, and CH number are memorized like the example of image transcription reservation-list DB of drawing 8 in the contents of the image transcription reserved list DB106. Drawing 12 is drawing showing an example of the list DB recorded on videotape. In the contents of the list DB recorded on videotape, as shown in drawing, Program ID, a broadcast date, start time, end time, CH number, a

broadcasting station, a title, and the contents are memorized by one program. When the image transcription time zone of the specified TV program and the TV program which is already in the reservation list recorded on videotape laps as exception handling (i.e., when it is going to record two or more TV programs on videotape in the same time zone), it also has the means as which a user is made to choose whether the target program [finishing / image transcription reservation / already] is canceled. Subsequently, it progresses to step S9. Moreover, when there is no program to carry out image transcription reservation and a TV program is not specified, it progresses to direct step S9.

[0036] Next, in step S6, it judges whether a program to reproduce is in the presentation list outputted to the client computer 300 (step S9), a program to reproduce is a TV program [finishing / an image transcription], and when it is specified, it progresses to step S10. When nothing is specified, it returns to step S1.

[0037] The playback means 112 elongates the compressed data of the MPEG 2 format of the program ID specified from storages, such as a hard disk of the MPEG data DB109, in the TV program [finishing / an image transcription] specified by step S9 with the MPEG 2 decoder 208, and outputs it to television equipment 114 by changing a digital signal into an analog signal with the D/A inverter 209 (step S10). Subsequently, it returns to step S1.

[0038] The system of this invention explained above can realize a computer by making it operate in a predetermined procedure. The program which described this predetermined procedure is stored in the record medium which can be read by computer. In this invention, you may be the program media which can be read in the thing of **** like the memory which is not illustrated, for example, ROM, as this record medium itself being good by program media, and it forming a pro ram reader as external storage, and inserting a record medium there. You may be the configuration which a microprocessor accesses and performs, or a program may be read and the program which is stored in the case of which may be a method with which the program which read is downloaded to the program storage area by which a computer is not illustrated, and the program is executed. The program for this download shall be beforehand stored in the main frame.

[0039] Said program media may be a body and a record medium constituted disengageable, and may be media including the semiconductor memory by card systems, such as optical disk systems, such as magnetic disks, such as tape systems, such as a magnetic tape and a cassette tape, a floppy disk, and a hard disk, and CD-ROM/MO/MD/DVD, and an IC card (a memory card is included)/optical card, or the mask ROM, EPROM and EEPROM, a flash ROM, etc. which support a program fixed here.

[0040] Moreover, in this invention, since it is the system configuration containing the Internet in which a communication network and connection are possible, you may be the medium which supports a program fluidly so that a program may be downloaded from a communication network. In addition, when downloading a program from a communication network in this way, the program for download is beforehand stored in the body of equipment, or may be installed from another record medium. In addition, it cannot be overemphasized that it is not limited to a program but data are also contained as contents stored in the record medium.

[0041]

[Effect of the Invention] As mentioned above, according to the system of this invention, TV program information, the information that it records on videotape, and image transcription schedule information are retrieved only by perusing the file object on a network based on the keyword extracted from the file object itself, and a program is shown to the order doubled with liking of a user. Moreover, to coincidence, image transcription reservation of the TV program can be carried out, or a TV program [finishing / an image transcription] can be reproduced. The system which made the perusal of a file object, TV program retrieval actuation, and video equipment actuation on a network cooperate by this is realizable.

[0042] And since a television race card is automatically shown the file object on a network with perusal, the effectiveness that cooperation actuation can perform smoothly the perusal of a file object and TV program retrieval actuation which were being operated separately, and video equipment actuation is also simplification of the time and effort which discovers a TV program, simplification of image

transcription reservation actuation of a TV program, and conventionally. The following effectiveness is brought about by invention which relates to each claim especially. Since according to invention of claim 1 check of the program broadcast from now on, image transcription reservation of a program to see, and playback of a program already recorded on videotape can be performed by analyzing the contents of the file object seen automatically now, and showing the TV program information relevant to the file object while perusing the file object on a network, information can be gathered also from television broadcasting other than on the Internet.

[0043] According to invention of claims 2 and 3, the user of a client calculating machine only does file object perusal without actuation of inputting a keyword input and a file, can discover a TV program based on the description extracted from the page, and can simplify the time and effort of an alphabetic character input.

[0044] Since the program information which also searched to coincidence the program by which image transcription reservation has already been carried out besides searching EPG, and the program [finishing / an image transcription] can be shown to a user according to invention of claim 4, the program broadcast from now on, image transcription reservation status, and the program information already recorded on videotape can be checked to coincidence.

[0045] According to invention of claim 5, a user can be provided only with program information required for an image transcription by retrieving only the EPG information broadcast from now on.

[0046] According to invention of claim 6, the race card according to liking of a user can be shown by sorting the shown race card in order of a user's liking.

[0047] Since a television race card can be automatically shown by perusing a network file object according to invention of claim 7, the check of file object perusal and a television race card is made without actuation of searching a television race card to coincidence.

[0048] Since image transcription playback actuation becomes possible by a series of actuation further according to invention of claim 8, the perusal of a network file object and TV program retrieval actuation which were being operated separately, and video image transcription playback actuation can be performed smoothly conventionally.

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TECHNICAL FIELD

[Field of the Invention] This invention cooperates at the time of homepage perusal of the Internet, and it carries out image transcription reservation of the TV program because a user directs to the approach of searching the television race card relevant to a homepage, and creating a race card, and the created race card with a mouse pointer etc., or it relates to the system which can perform playback of the TV program already recorded on videotape.

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EFFECT OF THE INVENTION

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[0042] And since a television race card is automatically shown the file object on a network with perusal, the effectiveness that cooperation actuation can perform smoothly the perusal of a file object and TV program retrieval actuation which were being operated separately, and video equipment actuation is also simplification of the time and effort which discovers a TV program, simplification of image transcription reservation actuation of a TV program, and conventionally. The following effectiveness is brought about by invention which relates to each claim especially. Since according to invention of claim 1 check of the program broadcast from now on, image transcription reservation of a program to see, and playback of a program already recorded on videotape can be performed by analyzing the contents of the file object seen automatically now, and showing the TV program information relevant to the file object while perusing the file object on a network, information can be gathered also from television broadcasting other than on the Internet.

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[0046] According to invention of claim 6, the race card according to liking of a user can be shown by sorting the shown race card in order of a user's liking.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] As mentioned above, conversely, even if the TV program could be interlocked with and it could see the homepage of the Internet related to a TV program as pleasure which united the television reception with the Internet perusal, while perusing the homepage of the Internet, it was not able to interlock and the television race card related to a homepage was not able to be known. Moreover, although the program to watch by choosing keyword alter operation or genre retrieval could be narrowed down when a TV program was searched with EPG etc., there was neither retrieval of the television race card which made the homepage under present perusal itself the keyword, nor a method of showing the searched program to the order doubled with liking of a user as a television race card.

[0007] This invention aims at offering the system which can also collect the information acquired from television broadcasting in addition to the information collected from the file object perusal on a network while it searches an electronic program guide and can perform image transcription playback control from perusal of the file object of the Internet.

[0008] Furthermore, this invention aims at offering the system which it image-transcription-reserves and can reproduce the method of making the TV program already recorded on videotape as TV program information relevant to the file object seen now, or the TV program broadcast from now on show automatically, and the specified TV program when the file object on a network is being perused.

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MEANS

[Means for Solving the Problem] In the system which invention of claim 1 presents a television race card in relation to file object perusal, and performs program playback recorded [image transcription reservation or] on videotape A feature-extraction means to extract the description from the contents of a file object on a network, A program retrieval means to search a television race card according to the description extracted by this feature-extraction means, It has a TV program timed recording means to reserve a desired program from the result searched by this program retrieval means, and a TV program playback means to reproduce the TV program recorded on videotape with this TV program image transcription reservation means.

[0010] Invention of claim 2 makes the description which the system feature extract means indicated by claim 1 extracts the keyword contained in the contents of a file object.

[0011] Invention of claim 3 shall extract the description for the feature-extraction means indicated by claim 1 from the similarity of the text of a file object, and the explanation phrase of an electronic program.

[0012] The program retrieval means in the system by which invention of claim 4 was indicated by claim 1 thru/or any 1 term of 3 shall carry out sequential execution of an electronic program table search, image transcription reserved program retrieval, and the recorded on videotape program retrieval.

[0013] Invention of claim 5 shall search only the program it is broadcast from current time henceforth that the electronic program table search in the system indicated by claim 4 is.

[0014] Invention of claim 6 has two or more display priority calculation methods, changes a calculation method according to liking of a user, and is equipped with a retrieval result plastic surgery means to be located in a line, to change the sequence of the retrieval result searched by claim 1 thru/or any 1 term of 5 with the program retrieval means of a publication, and to create a race card.

[0015] Invention of claim 7 displays the race card created by the retrieval result plastic surgery means in the system indicated by claim 6 on a client computer.

[0016] Invention of claim 8 can be made to perform image transcription assignment and playback assignment from the race card displayed on the client computer in the system indicated by claim 7.

[0017] A feature-extraction means to extract the description from the contents of a file object on the network where invention of claim 9 was indicated by claim 1, A program retrieval means to search a television race card according to the description extracted by this feature-extraction means, A TV program timed recording means to reserve a program from the result searched by this program retrieval means, A television race card is shown in relation to the file object perusal equipped with a TV program playback means to reproduce the TV program recorded on videotape with this TV program image transcription reservation means. It is the record medium which recorded the program for making a computer perform the system which performs program playback recorded [image transcription reservation or] on videotape.

[0018]

[Embodiment of the Invention] Drawing 1 is the block diagram showing the one whole example of the system of this invention. The control core 103 where the system of this invention controls the whole

system, The Internet 115 showing the Web server in which a file object exists, The feature-extraction means 102 of the contents of a file object of WWW, and the proxy server 101 which is the gateway which interrupts the document on the Web server which a client accesses, EPG which has remembered the television race card to be a program retrieval means 104 to retrieve TV program information DB105 (database), The image transcription reserved list DB106 which has memorized television image transcription reservation information, The list DB107 which memorizes the TV program information already recorded on videotape recorded on videotape, The presentation list 110 of [for showing a race card], and a retrieval result plastic surgery means 111 to change [stand it in a line and] and arrange a retrieval result, An image transcription means 108 to record the assignment channel from start time to end time on videotape, The gateway computer 200 which consists of MPEG data DB109 which store image transcription data, and a playback means 112 to reproduce the TV program recorded on videotape with said image transcription means 108 as a video signal, It consists of TV signal 113 for receiving, television equipment 114 which displays the program recorded on videotape, and a client computer 300 which operates the gateway computer 200.

[0019] Thus, it also becomes possible like the gateway computer 200 and the client computer 300 to connect the main gateway computers 200 with two or more client machines in every other 1 and a network domestic by roughly dividing into two. Moreover, it is also possible to make it the product which unified the gateway computer 200 and the client computer 300. Drawing 2 is the block diagram showing the hardware configuration of the gateway calculating machine 200. The gateway calculating machine 200 shall have CPU201, a hard disk 202, memory 203, MPEG 2 encoder equipment 204, A/D-conversion equipment 205, television tuner equipment 206 (it connects with the antenna 207), MPEG 2 decoder equipment 208, the D/A inverter 209 (it connects with television equipment 114), a communication controller 210 (LAN connects with the client calculating machine 300), and modem equipment 211 (the Internet 115 is accessed) for a communication link. It is accessed from each means of the image transcription means 108, the playback means 112, the feature-extraction means 102, the retrieval result plastic surgery means 111, and the program retrieval means 104, and a hard disk 202 is EPG. It is the medium which memorizes each database information on DB105, the image transcription reserved list DB106, the list DB107 recorded on videotape, the presentation list 110, and the MPEG data DB109.

[0020] Moreover, the image transcription means 108 consists of MPEG 2 encoder equipment 204, A/D-conversion equipment 205, and a television tuner 206, and the playback means 112 is constituted by MPEG 2 decoder equipment 208 and the D/A inverter 209. Drawing 3 is the block diagram showing the hardware configuration of a client calculating machine. The client computer 300 shall have memory 301, CPU302, nonvolatile memory 303, an input unit 304, a display 305, and network I/O306. This is equivalent to the equipment generally called a personal computer. Since the WWW browser of the client calculating machine 300 is relaying and carrying out the Internet access of the proxy server 101 in the gateway calculating machine 200, the gateway calculating machine 200 can extract the contents of the file object of WWW. In detail, the method of junction is explained to JP,10-021134,A.

[0021] Drawing 4 is the flow chart Fig. showing the operations sequence of the system of this invention. Below, according to the flow chart of drawing 4, operations sequence is explained with reference to the block diagram of drawing 1 thru/or drawing 3. First, the client calculating machine 300 accesses the file object on a network 115 from the WWW browser to build in (step S1). (relaying a proxy server 101)

[0022] Since the feature-extraction means 102 is always supervising the data transfer of a proxy server 101, the keyword by which it is characterized is extracted from detection of the access request from the client calculating machine 300, and the file object of a response (step S2). A file object is the description language devised in order to disseminate the information on WWW called HTML (Hyper Text Markup Language), by inserting a specific alphabetic character with the notation called a tag (tag), could perform the free layout display on the browser, and is equipped also with the hyperlink function which can be jumped from a hot spot (hot link) to other files.

[0023] Drawing 5 is drawing showing an example of HTML of a file object. this -- an example -- **** - the -- a tag -- inside -- a file -- an object -- a title -- a tag -- it is -- " -- < -- TITLE -- > -- " -- from -- " --

< -- /-- TITLE -- > -- " -- surrounding -- having had -- a phrase -- a hyperlink -- carrying out -- a tag -- "
 -- < -- AHERF -- = -- O -- x -- ** -- > -- " -- from -- " -- < -- /-- A -- > -- " -- surrounding -- having --
 **** -- a phrase -- all -- a file -- an object -- the description -- it is -- ** -- carrying out . The feature-extraction means 102 extracts as a keyword the phrase inserted into these tags. In order to extract as a keyword, morphological analysis of the phrase is carried out and only a noun is extracted. This noun may be a maximum of ten etc. pieces etc.

[0024] Drawing 6 is the keyword extracted as a description of a file object in the example shown in drawing 5 . That is, the three phrases "golf", the "Ozaki twin", and a "driver" were extracted from the file object as a description keyword. A television race card is searched with an OR for these words. Consequently, the TV program which contains the keyword of one of the above in a program title (explanation of a program) is searched. Moreover, as search methods other than this, a semantic vector method etc. can vectorize the semantics of the whole document, an inner product with the semantic vector of the program explanatory note of an electronic program guide can be calculated, and the search method of showing numerical high order can also be used (bibliography "the mystery of Sherlock natural sentence retrieval", Yamamoto Takaki: Mac Fan internet, the Mainichi Communications, Inc. March, 1999 issue).

[0025] The program retrieval means 104 aims at carrying out three retrieval of recorded [an electronic program table search and reserved program retrieval /] on videotape program retrieval, searching a desired program one by one, and creating the presentation list 110.

[0026] Next, it is EPG at the keyword extracted at step S2. The TV program which carries out the electronic program table search searched for the TV program broadcast by current time after this is the future, without targetting the past program from current time from DB105, and corresponds is extracted, and the presentation list 110 is created (step S3). In addition, especially since it is obtained from OS timer which a gateway computer contains, current time is not illustrated.

[0027] EPG which is an electronic program database here DB105 collected EPG data by which television broadcasting is carried out, such as an ADMS-EPG method, from TV signal 113, changed them into the database which can be searched, and has memorized the data for about one week to the storage of the hard disk 202 which is a storage region [**** / un-]. Since the EPG data itself are ability ready for receiving and it can also collect the Internet courses using the alphabetic character data-broadcasting reception function of television tuner equipment 206, it does not specify the collection means on a drawing especially. Drawing 7 is EPG. It is drawing showing the example of data memorized by DB. About 200 bytes of text sentence as which the DS of a television race card explains Program ID, a broadcast date, start time, end time, CH number, a broadcasting station, a title, and the contents to one program is memorized.

[0028] and -- if there is a program which performs reserved program retrieval which searches whether there is any program by which image transcription reservation has already been carried out into the presentation list 110 created at step S3 from the image transcription reserved list DB106, and has already been recorded on videotape -- a presentation list -- an image transcription -- reserved information is given and the presentation list 110 is corrected (step S4). Drawing 8 is drawing showing the example of data memorized by the image transcription reservation list DB. Like illustration, since the image transcription reservation list DB has memorized Program ID, a broadcast date, start time, end time, and CH number to one program, reserved program retrieval is realizable by searching whether the program ID of the presentation list 110 exists also in the program ID of the image transcription reserved list DB.

[0029] Subsequently, by the keyword extracted at step S2, if a registered program search which searches a TV program [finishing / an image transcription] from the list DB107 recorded on videotape is performed and there is a corresponding TV program, the information which is image transcription settled will be added and added to the presentation list 110 (step S5). Drawing 9 is drawing showing the example of the presentation list generated after said step S3 - S5. In addition, the "sheep" of the information column of a list, "reservation", and settled ["settled"] are information which expresses the "image transcription reservation sheep" and "finishing [image transcription reserved" and "image

transcription]", respectively.

[0030] For the retrieval result plastic surgery means 111, when the broadcast time of each program sorts in the order nearest to current time, the presentation list 110 created through said steps S3-S5 The program in which the means arranged in the order near current time and the keyword extracted with the feature-extraction means 102 are contained The means arranged in order of the fitness of retrieval by sorting with the number of the keywords, For example, a means to remove the program of a before [from 18:00 / 23:00] and to limit to appointed time-of-day within the limits, a means to limit time like a part for today's part or 1 week, and image transcription reservation -- finishing -- an image transcription -- finishing -- giving priority to and sorting either of the programs broadcast from now on **** -- image transcription reservation -- finishing -- an image transcription -- finishing -- there is a means except either of the programs broadcast from now on etc. A user is any one or making a multiple selection among these retrieval result plastic surgery means 111, and presents the television race card whose liking of a user the client calculating machine 300 suited (step S6). Drawing 10 is drawing showing the example of the presentation list of retrieval result plastic surgery means. The example arranged in the order near current time as an example of presentation of the presentation list 110 of retrieval result plastic surgery means 111 and the example put in order from the fitness of retrieval are shown.

[0031] Drawing 11 is drawing showing the example of a screen display of a client computer. The presentation list 110 is 1 time of timing at about 1 second, the newest data are displayed on the screen of a client computer, and the presentation list 110 is always displayed on screen right-hand side. It is because renewal of automatic [fixed] is carried out by the software by the side of these client computer.

[0032] therefore -- if a client peruses the file object on a network -- immediately after that -- a radical [page / applicable] -- a television race card and an image transcription -- reserved and the electronic program guide which made data recorded on videotape the list will be made, and the user of the client computer 300 will be shown.

[0033] A TV program is specified by judging whether there is any TV program to record on videotape (step S7), doubling cursor for the check box of the image transcription check column which is in the left end of a presentation list when there is a program to carry out image transcription reservation with the mouse of an input device 304 in step S6, in the presentation list outputted to the indicating equipment 305 of the client calculating machine 300, and carrying out click actuation of the mouse button. This event is transmitted to the image transcription reservation means of the gateway computer 200 via a network with Program ID, and image transcription reservation is performed. The image transcription reservation means incorporated focusing on [103] control saves the television image transcription program specified at step S7 on the image transcription reserved list DB106 (step S8).

[0034] If the image transcription start time of each TV program of the image transcription reserved list DB106 comes, from TV signal 113, the television broadcasting of predetermined CH number will be received through television tuner equipment 206 till end time, and Program ID will be recorded on record media, such as a hard disk of the MPEG data DB109, as an index. In the format called MPEG 2 (Moving Picture Experts Group) to said recording method, an animation is made easy to change an analog signal into a digital signal with A/D-conversion equipment 205, and to treat by computer, and a vast quantity of video datas are compressed and memorized with a data compression means. In addition, the image transcription of video is not limited to MPEG 2.

[0035] As for the TV program which the image transcription completed, the TV program information by which said image transcription was carried out to the list DB recorded on videotape is memorized after deletion from the image transcription reserved list DB107. Program ID, a broadcast date, start time, end time, and CH number are memorized like the example of image transcription reservation-list DB of drawing 8 in the contents of the image transcription reserved list DB106. Drawing 12 is drawing showing an example of the list DB recorded on videotape. In the contents of the list DB recorded on videotape, as shown in drawing, Program ID, a broadcast date, start time, end time, CH number, a broadcasting station, a title, and the contents are memorized by one program. When the image transcription time zone of the specified TV program and the TV program which is already in the

reservation list recorded on videotape laps as exception handling (i.e., when it is going to record two or more TV programs on videotape in the same time zone), it also has the means as which a user is made to choose whether the target program [finishing / image transcription reservation / already] is canceled. Subsequently, it progresses to step S9. Moreover, when there is no program to carry out image transcription reservation and a TV program is not specified, it progresses to direct step S9.

[0036] Next, in step S6, it judges whether a program to reproduce is in the presentation list outputted to the client computer 300 (step S9), a program to reproduce is a TV program [finishing / an image transcription], and when it is specified, it progresses to step S10. When nothing is specified, it returns to step S1.

[0037] The playback means 112 elongates the compressed data of the MPEG 2 format of the program ID specified from storages, such as a hard disk of the MPEG data DB109, in the TV program [finishing / an image transcription] specified by step S9 with the MPEG 2 decoder 208, and outputs it to television equipment 114 by changing a digital signal into an analog signal with the D/A inverter 209 (step S10). Subsequently, it returns to step S1.

[0038] The system of this invention explained above can realize a computer by making it operate in a predetermined procedure. The program which described this predetermined procedure is stored in the record medium which can be read by computer. In this invention, you may be the program media which can be read in the thing of **** like the memory which is not illustrated, for example, ROM, as this record medium itself being good by program media, and it forming a program reader as external storage, and inserting a record medium there. You may be the configuration which a microprocessor accesses and performs, or a program may be read and the program which is stored in the case of which may be a method with which the program which read is downloaded to the program storage area by which a computer is not illustrated, and the program is executed. The program for this download shall be beforehand stored in the main frame.

[0039] Said program media may be a body and a record medium constituted disengageable, and may be media including the semiconductor memory by card systems, such as optical disk systems, such as magnetic disks, such as tape systems, such as a magnetic tape and a cassette tape, a floppy disk, and a hard disk, and CD-ROM/MO/MD/DVD, and an IC card (a memory card is included)/optical card, or the mask ROM, EPROM and EEPROM, a flash ROM, etc. which support a program fixed here.

[0040] Moreover, in this invention, since it is the system configuration containing the Internet in which a communication network and connection are possible, you may be the medium which supports a program fluidly so that a program may be downloaded from a communication network. In addition, when downloading a program from a communication network in this way, the program for download is beforehand stored in the body of equipment, or may be installed from another record medium. In addition, it cannot be overemphasized that it is not limited to a program but data are also contained as contents stored in the record medium.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the whole system of one example of this invention.

[Drawing 2] It is the block diagram showing the hardware configuration of the gateway calculating machine in drawing 1.

[Drawing 3] It is the block diagram showing the hardware configuration of the client calculating machine in drawing 1.

[Drawing 4] It is the flow chart which shows the procedure of the system of this invention.

[Drawing 5] It is drawing having shown the example of HTML of a file object.

[Drawing 6] It is drawing having shown the example of a keyword after a feature extraction.

[Drawing 7] EPG It is drawing having shown the outline of DB.

[Drawing 8] It is drawing having shown the example of image transcription reservation-list DB.

[Drawing 9] It is drawing having shown the example of the contents of a presentation list.

[Drawing 10] It is drawing having shown the example of a display of the presentation list of retrieval result plastic surgery means.

[Drawing 11] It is drawing having shown the example of a screen display to a client computer.

[Drawing 12] It is drawing having shown the example of recorded on videotape list DB.

[Description of Notations]

101 -- A proxy server, 102 -- A feature-extraction means, 103 -- Control core, 104 -- A program retrieval means, 105 -- EPG DB, 106 -- Image transcription reserved list DB, 107 -- The list DB recorded on videotape, 108 -- An image transcription means, 109 -- MPEG data DB, 110 -- A presentation list, 111 -- A retrieval result plastic surgery means, 112 -- Playback means, 113 -- A TV signal, 114 -- Television equipment, 115 -- Internet, 200 -- A gateway calculating machine, 201 -- CPU, 202 -- Hard disk, 203 -- Memory, 204 -- MPEG 2 encoder equipment, 205 -- A/D-conversion equipment, 206 -- Television tuner equipment, 207 -- An antenna, 208 -- MPEG 2 decoder equipment, 209 [-- A client computer, 301 / -- Memory, 302 / -- CPU, 303 / -- Nonvolatile memory, 304 / -- An input unit, 305 / -- A display, 306 / -- Network I/O.] -- A D/A inverter, 210 -- The CCE, 211 -- The modem equipment for a communication link, 300

[Translation done.]